

H07-49837(43) Publication date H7 (1995)
February 21

(51) Int. Cl. ⁵	Identification codes	JPO file number	FI	Technical indications
G 06 F 15/00	310 M	7459-5L		
9/06	410 J	9367-5B		
9/46	340 A	8120-5B		

Request for examination Requested Number of claims 2 FD (Total of 8 pages)

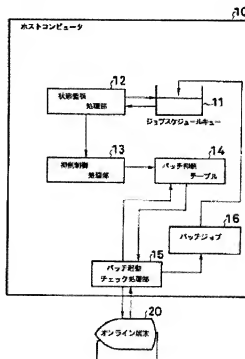
(21) Application number	H05-215124	(71) Applicant	000004237 NEC ELECTRONICS, CO., LTD. 5-7-1 SHIBA, MINATO-KU, TOKYO
(22) Date of application	H5 (1993) August 6	(72) Inventor	AKINORI SATO % NEC ELECTRONICS, CO., LTD. 5-7-1 SHIBA, MINATO-KU, TOKYO
		(74) Agent	Patent attorney JUNICHI KAWAHARA

(54) (TITLE OF THE INVENTION) Batch job boot management method from an online terminal**(57) (ABSTRACT)**

(AIM) To perform suppression control of batch job boots by managing batch job boot from an online terminal.

(STRUCTURE) The status monitor processing part 12 will send the suppression indication information after monitoring the job schedule queue 11 at specific time intervals, and the suppression control processing part 13 will update the batch suppression table 14 based on the transmitted suppression indication information. The batch boot check processing part 15 will refer to the batch suppression table 14 when there is a boot request for a batch job 16 from the online terminal 20, and determining whether to suppress the booting of the batch job 16, when suppressing the batch job boot, it will send a message to this effect to the online terminal 20, and when not suppressing the batch job boot, it will place the batch job 16 into the job schedule queue 11.

[translation of text in figure by number: 10 host computer, 12 status monitor processing part, 11 job schedule queue, 13 suppression control processing part, 14 batch suppression table, 16 batch job, 15 batch boot check processing part, 20 online terminal]



(SCOPE OF PATENT CLAIMS)

(CLAIM 1) An online system where the online terminal is connected to the host computer via a communication line, and when there is a boot request for a batch job from the online terminal at the host computer, the batch job will be placed in the job schedule queue, comprising:

a batch suppression table to manage the suppression indication information showing whether or not to suppress the batch job boot,

a status monitor processing part that will send the suppression indication information by monitoring said job schedule queue at specific time intervals,

a suppression control processing part to update said batch suppression table based on the suppression indication information that has been sent from this status monitor processing part, and

a batch boot check processing part that will determine whether or not to suppress the batch job boot while referring to said batch suppression table when there has been a boot request for a batch job from the online terminal, and when suppressing the batch job boot, it will send a message to this effect to the online terminal, and when not suppressing the batch job boot, it will place the batch job into said job schedule queue.

(CLAIM 2) A batch job boot management method from an online terminal as noted in Claim 1, where said batch suppression table is comprised of a batch job class suppression table that stores the job class and suppression flag for the batch job and a job/class relation table that stores the job name and the job class, and where said batch suppression table will perform suppression control of batch job boots in units of job class.

(DETAILED DESCRIPTION OF THE INVENTION)

(0001)

(FIELD OF INDUSTRIAL APPLICATION) The present invention relates to a batch job boot management method, and in particular, relates to a batch job boot management method from an online terminal in an online system where, if there is a boot request for a batch job from the online terminal to the host computer, this batch job will be placed in the job schedule queue.

(0002)

(PRIOR ART) In conventional online systems, because no particular batch job boot management, such as extracting a boot record from the online terminal, updating files or searching data, has been performed, a system has been used in which, periodically the operator will monitor the schedule status of the job schedule queue, and if there is a large number of waiting batch jobs, approaching the upper limit of the job schedule queue, then the upper limit of the job schedule queue is expanded.

(0003) Therefore, in the worst case, there have been problems in which the upper limit of the job schedule queue is exceeded, and with a new batch job entered, this batch job will end abnormally.

(0004)

(PROBLEM TO BE SOLVED BY THE INVENTION) In the above described conventional online system, while there are normally no problems on days when there are few batch jobs such as extracting reports, when processing increases, such as at the end of the month or term, when the following types of problems may be encountered.

(0005) First, it may be necessary for an operator to periodically monitor the status of the batch job schedule in the job schedule queue, requiring human labor.

(0006) Second, even if the upper limit of the job schedule queue is expanded, a significant amount of time will be required until obtaining the results of a batch job such as extraction of a report to the online terminal, leading to a reduction in user service.

(0007) Third, after exceeding the upper limit of the job schedule queue, any further batch jobs will end abnormally, leading to a reduction in user trust in the online system.

(0008) The aim of the present invention is to provide a batch job management method where the batch job boots are managed from the online terminal, and in which suppression management of the batch job boots is performed.

(0009)

(MEANS FOR SOLVING THE PROBLEM) The batch job management method from an online terminal according to the present invention is an online system where the online terminal is connected to the host computer via a communication line, and when there is a boot request for a batch job from the online terminal to the host computer, the batch job will be placed in the job schedule queue, and where this system comprises a batch suppression table to manage the suppression indication information showing whether or not to suppress the batch job boot, a status monitor processing part that will send the suppression indication information by monitoring said job schedule queue at specific time intervals, a suppression control processing part to update said batch suppression table based on the suppression indication information that has been sent from this status monitor processing part, and a batch boot check processing part that will determine whether or not to suppress the batch job boot while referring to said batch suppression table when there has been a boot request for a batch job from the online terminal, and when suppressing the batch job boot, it will send a message to this effect to the online terminal, and when not suppressing the batch job boot, it will place the batch job into said job schedule queue.

(0010)

(EXAMPLE OF EMBODIMENT) Next, we will explain the present invention in detail while referring to the figures.

(0011) Figure 1 is a block diagram showing the structure of the batch job boot management method from an online system according to the first example of embodiment of the present invention. The online system that uses the batch job boot management method from an online terminal in the present example of embodiment is constructed where the online terminal 20 is connected to the host computer 10 via the communication line (not shown in the figure),

and the host computer 10 includes a job schedule queue 11, a status monitor processing part 12 to send suppression indication information, such as the number of waiting jobs in units of job class, the boot suppression decision tree and the decision results while referring to the job schedule queue 11 at specific time intervals, to the suppression control processing part 13, a suppression control processing part 13 to update the batch suppression table 14 using the suppression indication information for each job class from the status monitor processing part 12, a batch suppression table 14 to manage the relationship between the job name and the job class and the suppression of each job class, a batch boot check processing part 15 to refer to the batch suppression table 14 at the point where there is a request for a boot of a batch job 16 such as report extraction from the online terminal, and when the batch job 16 is a boot suppression object (when the suppression flag is "ON"), it will send a message saying "I am currently busy" to the online terminal 20, and when it is not a boot suppression object (when the suppression flag is "OFF"), it will place the batch job 16 into the job schedule queue 11, and a batch job 16 that is placed into the job schedule queue 11 from the batch boot check processing part 15.

(0012) Referring to Figure 2, the processing in the status monitor processing part 12 comprises a class completion determination step 21, a schedule status monitor command execution step 22, a schedule number acquisition step 23, a schedule number upper limit determination step 24, a schedule number lower limit determination step 25, a suppression flag off-set step 26, and a suppression flag on-set step 27.

(0013) Referring to Figure 3, the batch suppression table 14 is composed of a (a) batch job class suppression table, and a (b) job/class relation table. The batch job class suppression table will store multiple sets of information where the job class and suppression flag are treated as a pair. The job/class relation table will store multiple sets of information where the job name and job class are treated as a pair.

(0014) Next, we will explain the operation of the batch job boot management method from an online terminal according to the present example of embodiment that is constructed in this manner while referring to Figures 4 and 5.

(0015) Figure 4 is a diagram showing an operational example for the case where the batch job 16 as requested from the online terminal is not a boot suppression object.

(0016) The status monitor processing part 12 will execute a schedule status monitor command (step 22) for all job classes sequentially at intervals of, for instance, 10 minutes, and acquiring the number of schedules for a job class from the job schedule queue 11 (step 23), it will make the determination as to whether the number of schedules is, for instance, greater than 50 (step 24) or less than 30 (step 25), and if, for instance, the number of schedules is greater than 50, it will set the suppression flag to ON (step 27), and if the number is less than 30, it will set the suppression flag to OFF (step 26), and it will send the suppression indication information including the suppression flags with the job classes to the suppression control processing part 13.

(0017) The suppression control processing part 13 will receive the suppression indication information for each job class from the status monitor processing part 12, and it will update the suppression flags for the corresponding job classes in the batch job class suppression table of the batch suppression table 14.

(0018) The user will make a batch job boot request, such as the desire to extract a certain report, from the online terminal 20 (job name: A1 (see Figure 3(b))).

(0019) When the batch boot check processing part 15 receives a batch job boot request from the online terminal 20, it will obtain the job class (job class: M (see Figure 3(b))) for the appropriate job (job name: A1 (see Figure 3(b))) while referring to the job/class relation table in the batch suppression table 14, and referring to the batch job class suppression table, it will determine the suppression flag for this job class. As a result of the determination, because the flag is OFF, the batch boot check processing part 15 will make the determination that it is not a boot suppression object, and it will place the batch job 16 (job name: A1 (see Figure 3(b))) into the job schedule queue 11.

(0020) Figure 5 is a diagram showing the case of operation when the batch job as requested for booting from the online terminal is a boot suppression object.

(0021) The status monitor processing part 12 will execute a schedule status monitor command (step 22) for all job classes sequentially at intervals of, for instance, 10 minutes, and acquiring the number of schedules for a job class from the job schedule queue 11 (step 23), it will make the determination as to whether the number of schedules is, for instance, greater than 50 (step 24) or less than 30 (step 25), and if, for instance, the number of schedules is greater than 50, it will set the suppression flag to ON (step 27), and if the number is less than 30, it will set the suppression flag to OFF (step 26), and it will send the suppression indication information including the suppression flags with the job classes to the suppression control processing part 13.

(0022) The suppression control processing part 13 will receive the suppression indication information for each job class from the status monitor processing part 12, and it will update the suppression flags for the corresponding job classes in the batch job class suppression table of the batch suppression table 14.

(0023) The user will make a batch job boot request, such as the desire to extract a certain report, from the online terminal 20 (job name: A2 (see Figure 3(b))).

(0024) When the batch boot check processing part 15 receives a batch job boot request from the online terminal 20, it will obtain

the job class (job class: N (see Figure 3(b)) for the appropriate job (job name: A2 (see Figure 3(b)) while referring to the job/class relation table in the batch suppression table 14, and referring to the batch job class suppression table, it will determine the suppression flag for this job class. As a result of the determination, because the flag is ON, the batch boot check processing part 15 will determine that it is a boot suppression object, and outputting a message of "The queue is currently full" to the online terminal, it will encourage the user to once again send the batch job boot request.

(0025) In the above example of embodiment, the batch suppression table 14 is constructed from a batch job class suppression table and a job/class relation table, and while the batch job boots underwent suppression control in units of job class, the units for performing suppression control of the batch jobs is not necessarily limited to the job class, and it goes without saying that this control can also be performed in units of batch jobs.

(0026)

(EFFECT OF THE INVENTION) As described above, the present invention comprises a status monitor processing part, a suppression control processing part, a batch suppression table and a batch boot check processing part, and when performing booting of a batch job from the online terminal, suppression of the boot is performed according to the status of the job schedule queue, and by outputting a message to this effect to the online terminal, there is no need for an operator to monitor the schedule status of the job schedule queue, leading to the effect of reducing human labor.

(0027) Also, because it is possible to know at the online terminal side whether or not a boot request for a batch job, such as the extraction of a report, has been accepted, when the batch job boot request has been accepted, the time required until the results of the batch job are obtained is guaranteed, leading to the effect of an improvement in user service.

(0028) Further, as there will be no abnormal completion errors of jobs that are inputted after the job schedule queue upper limit has been exceeded, the effect will be to increase user trust in the online system.

(BRIEF DESCRIPTION OF THE DRAWINGS)

(FIGURE 1) This is a block diagram showing the structure of the batch job boot management method from an online terminal according to the first example of embodiment of the present invention.

(FIGURE 2) This is a flowchart showing the processing in the status monitor processing part in Figure 1.

(FIGURE 3) This shows the batch suppression table in Figure 1, where (a) shows the batch job class suppression table and (b) shows the job/class relation table.

(FIGURE 4) This is a diagram showing the case of operation of a non-boot suppression object in the batch job boot management method from an online terminal in the present example of embodiment.

(FIGURE 5) This is a diagram showing the case of operation of a boot suppression object in the batch job boot management method from an online terminal in the present example of embodiment.

(EXPLANATION OF REFERENCES)

- 11 job schedule queue
- 12 status monitor processing part
- 13 suppression control processing part
- 14 batch suppression table
- 15 batch boot check processing part
- 16 batch job
- 20 online terminal

Figure 3

Batch suppression table

(a) Batch job class suppression table

Job class	Suppression flag	Job class	Suppression flag	Job class	Suppression flag	...	Job class	Suppression flag
M	OFF	N	ON	O	ON	...	R	OFF

(b) Job/class relation table

Job name	Job class	Job name	Job class	Job name	Job class	...	Job name	Job class
A1	M	A2	N	A3	N	...	An	R

Figure 1

[translation of text in figure by number: 10 host computer, 12 status monitor processing part, 11 job schedule queue, 13 suppression control processing part, 14 batch suppression table, 16 batch job, 15 batch boot check processing part, 20 online terminal]

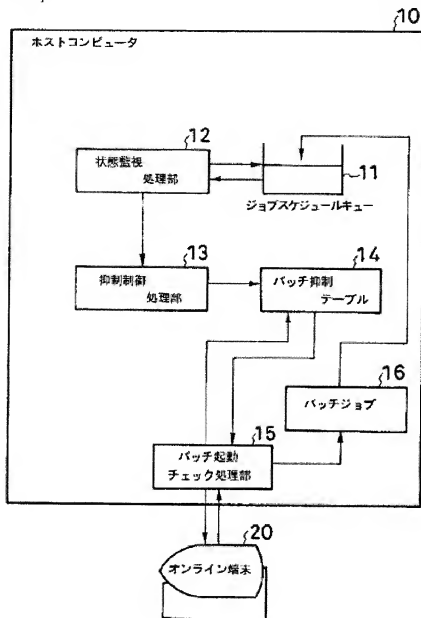


Figure 2

Status monitor processing part 12

Start

Have all of the corresponding classes finished? 21

Yes Completed

No

Execute schedule status monitor command 22

Acquire schedule number 23

Schedule number ≥ 50 24

Yes

No

Set suppression flag to ON 27

Schedule number ≤ 20 25

Yes

No

Set suppression flag to OFF 26

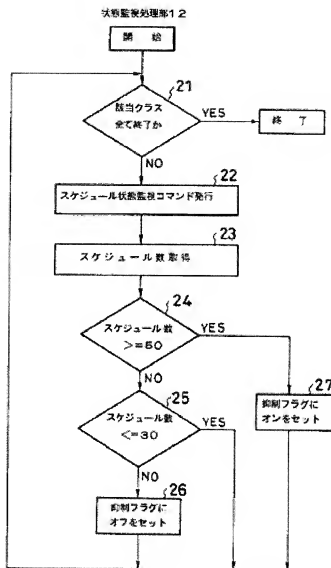


Figure 4

[translation of text in figure by number: 10 host computer, 12 status monitor processing part, 11 job schedule queue, 13 suppression control processing part, 14 batch suppression table, 16 batch job, 15 batch boot check processing part, 20 online terminal]

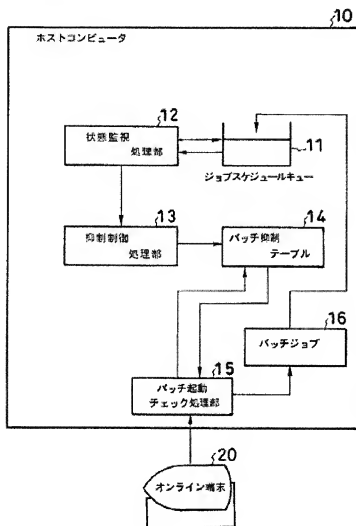


Figure 5

[translation of text in figure by number: 10 host computer, 12 status monitor processing part, 11 job schedule queue, 13 suppression control processing part, 14 batch suppression table, 15 batch boot check processing part, 20 online terminal]

